heating the planar surface of the second plastic substrate to a temperature greater than Tg2, wherein T2 remains less than Tg2; and

bonding thermally the planar surface of the first plastic substrate to the planar surface of the second plastic substrate forming a leak proof enclosure of the microstructures.

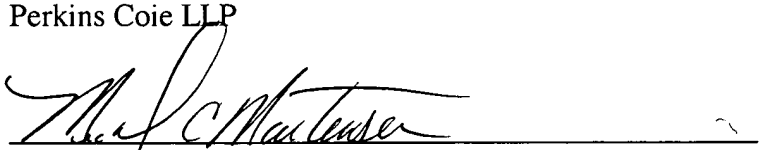
Remarks:

This is a preliminary amendment to a Rule 1.53(b)-1 continuation application of co-pending parent application serial number 09/496,601, filed February 2, 2000. Note that the parent 09/496,601has not been abandoned or issued.

In light of the foregoing preliminary amendment and remarks, the applicant requests reconsideration of the application and an allowance of all pending claims. If the Examiner wishes to discuss the above-noted amendment, or if the Examiner notices any informalities in the claims, the Examiner is encouraged to contact Michael Martensen by telephone at (650) 838-4406 to expediently correct any such informalities.

Respectfully submitted,

Perkins Coie LLP



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APPENDIX – SPECIFICATION MARKED TO SHOW CHANGES

Paragraph starting on page 1, line 4:

This application is a Continuation of Application Ser. No. 09/496,601, filed on February 2, 2000, which is a Continuation of Application Ser. No. 08/878,437, now U.S. Patent No. 6,176,962, filed on June 18, 1997, which is a Continuation-in-part of Ser. No. 08/853,661, filed May 9, 1997; ~~This application is a Continuation-in-part of Ser. No. 08/___,___, filed May 9, 1997 [Attorney Docket No. A-62852-2], which is a Continuation-in-part of Ser. No. 08/832,890, filed April 4, 1997 [Attorney Docket No. A-62852-1], which is a Continuation-in-part of Ser. No. 08/627,485, filed April 4, 1996, which is a Continuation-in-part of Ser. No. 08/430,134, filed February 14, 1994, abandoned, which was a Continuation of Ser. No. 08/196,763, filed May 7, 1992, abandoned, which was a Continuation of Ser. No. 07/487,021, filed February 28, 1990; and this application is a Continuation-in-part of Ser. No. 08/615,642, filed March 13, 1996, which is a Continuation-in-part of Ser. No. 08/430,134, *supra*;~~ and this application is a Continuation-in-part of Ser. No. 08/715,338, filed September 18, 1996; and this application is a Continuation-in-part of Ser. No. 08/690,307, filed July 30, 1996, now U.S. Patent No. 5,770.029. The foregoing U.S. Patent Applications are hereby incorporated herein by reference in their entirety.

Paragraph starting on page 6, line 30:

The structures may take a variety of different shapes; they may, for example, be including disc-like or card-like, and they may be layered or laminated "sandwich" structures. Representative shapes for such structures are further described in, for example, U.S. Patent Applications Serial Nos. ~~08/615,642, 08/___,___ [Attorney Docket No. A-62852-2], 08/715,338, 08/690,307~~08853,661 and 08/715,338 and U.S. Patent Nos. 5,750,015 and 5,770,029.

Paragraph starting on page 7, line 15:

Both the base and cover substrates can be fabricated using any convenient methodology, such as molding, casting, extrusion sheet forming, calendaring, thermoforming, and the like. Suitable base and cover substrates for use in the subject invention are further described in U.S. Pat. Applications Serial Nos. ~~08/615,642, 08/___,___ [Attorney Docket No. A-62852-2], 08/715,338, 08/690,307~~08/853,661 and 08/715,338 and U.S. Patent Nos. 5,750,015 and 5,770,029.

Paragraph starting on page 8, line 8:

Base **12** has a planar surface **13** in which a microchannel structure is formed, including intersecting linear microchannels **21**, **23**. At the ends of the channels holes **22**, **24**, **26**, **28** are bored through, to provide reservoirs for fluids to be moved within the channels. Techniques for forming the microchannel structure in the base plate are disclosed, for example, in U.S. Patent Application Ser. No. ~~08/___,___ [Attorney Docket No. A-62852-2].~~08/853,661. The microchannels as formed in the base plate are open, that is, absent a cover apposed to the channel-bearing surface **13** of the base plate, the microchannels are not fully enclosed.

Paragraph starting on page 17, line 12:

In this Example, the experimental parameters and conditions for the electro0phoresis separation and detection of the *Hae III* digest of Φ174 RF DNA fragments under non-denaturing conditions were as in Example 3. Results of the separation using the PMMA/PDMS microchannel structures are shown in ~~Fig. 4~~Fig. 8. In this Example, separation of the eleven double stranded fragments was achieved in 5.0 minutes of total separation time.